WHAT IS CLAIMED IS:

1. A separating apparatus for separating a disk-like member having a separation layer inside comprising:

a holding mechanism for holding the disk-like member while rotating the disk-like member about an axis perpendicular to the separation layer; and

a fluid ejection portion for injecting a stream of fluid into the separation layer of the disk-like member held by said holding portion to separate the disk-like member at the separation layer by the fluid,

wherein when separating a peripheral portion of the disk-like member, a rotational direction of the disk-like member, a moving direction of the fluid, and a position of said ejection portion are maintained to satisfy a condition in which the moving direction component of the velocity of the peripheral portion of disk-like member at an injection position of the fluid to the disk-like member has a negative value, assuming the moving direction of the fluid in the positive direction.

2. The apparatus according to claim 1, wherein when separating the peripheral portion of the disk-like member, said ejection portion ejects the fluid having pressure at which an outermost peripheral portion of the disk-like member is separated from an inside to an outside by the fluid injected into the disk-like member.

3. The apparatus according to claim 1, further

comprising a control section for controlling the pressure of the fluid ejected from said ejection portion.

4. The apparatus according to claim 3, wherein said control section changes the pressure of the fluid in accordance with progress of separation processing.

5. The apparatus according to claim 1, further comprising a driving mechanism for moving said ejection portion along the separation layer.

6. The apparatus according to claim 5, wherein when separating the peripheral portion of the disk-like member, said driving mechanism adjusts the position of said ejection portion such that the fluid is injected into the peripheral portion, and when separating a center of the disk-like member, said driving mechanism adjusts the position of said ejection portion such that the fluid is injected into the center.

7. The apparatus according to claim 1, wherein the separation layer is more fragile than remaining portions of the disk-like member.

8. The apparatus according to claim 1, wherein the separation layer is a porous layer.

9. The apparatus according to claim 1, wherein the separation layer is a porous layer having a multilayered structure.

10. A separating apparatus for separating a disk-like member having a separation layer inside comprising:

a holding portion for holding the disk-like member; and

a fluid ejection portion for injecting a stream of fluid to the separation layer of the disk-like member held by said holding portion to separate the disk-like member at the separation layer by the fluid,

wherein when separating a peripheral portion of the disk-like member, separation processing is executed under a condition in which an outermost peripheral portion of the disk-like member is separated from an inside to an outside of the disk-like member by the fluid injected into the disk-like member.

11. The apparatus according to claim 10, wherein said holding portion has a rotation mechanism for holding the disk-like member while rotating the disk-like member.

12. A separating method of rotating a disk-like member having a separation layer inside about an axis perpendicular to the separation layer and ejecting a stream of fluid from an ejection portion into the separation layer to separate the disk-like member at the separation layer by the fluid comprising:

the peripheral portion separation step of separating a peripheral portion of the disk-like member when a rotational direction of the disk-like member, a moving direction of the fluid, and a position of said ejection portion satisfy a condition in which the moving direction

component of the velocity of the disk-like member at an injection position of the fluid to the disk-like member has a negative value.

13. The method according to claim 12, wherein the peripheral portion separation step comprises ejecting, from said ejection portion, the fluid having pressure at which an outermost peripheral portion of the disk-like member is separated from an inside to an outside by the fluid injected into the disk-like member.

14. The method according to claim 12, further comprising the control step of controlling the pressure of the fluid ejected from said ejection portion.

15. The method according to claim 12, wherein the separation layer is more fragile than remaining portions of the disk-like member.

16. The method according to claim 12, wherein the separation layer is a porous layer.

17. The method according to claim 12, wherein the separation layer is a porous layer having a multilayered structure.

18. A separating method of holding a disk-like member having a separation layer inside, ejecting a stream of fluid from an ejection portion, and injecting the fluid into the separation layer to separate the disk-like member at the separation layer by the fluid comprising:

the peripheral portion separation step of separating

a peripheral portion of the disk-like member under a condition in which an outermost peripheral portion of the disk-like member is separated from an inside to an outside of the disk-like member by the fluid injected into the disk-like member.

19. The method according to claim 18, wherein the peripheral portion separation step comprises executing separation processing while rotating the disk-like member about an axis perpendicular to the separation layer.

20. A method of manufacturing a semiconductor substrate comprising:

the step of preparing a first substrate having a porous layer inside and a non-porous layer on the porous layer;

the step of bonding the first substrate and a second substrate via the non-porous layer to form a bonded substrate stack; and

the separation step of separating the bonded substrate stack into two substrates at the porous layer while rotating the bonded substrate stack about an axis perpendicular to the porous layer and ejecting a stream of fluid and injecting the fluid into the porous layer,

wherein the separation step comprises the peripheral portion separation step of separating a peripheral portion of the bonded substrate stack when a rotational direction of the bonded substrate stack, a moving direction of the

fluid, and a position of said ejection portion satisfy a condition in which the moving direction component of the velocity of the bonded substrate stack at an injection position of the fluid to the bonded substrate stack has a negative value.

21. A method of manufacturing a semiconductor substrate comprising:

the step of preparing a first substrate having a porous layer inside and a non-porous layer on the porous layer;

the step of bonding the first substrate and a second substrate via the non-porous layer to form a bonded substrate stack; and

the separation step of separating the bonded substrate stack into two substrates at the porous layer while ejecting a stream of fluid and injecting the fluid into the porous layer,

wherein the separation step comprises the peripheral portion separation step of separating a peripheral portion of the bonded substrate stack under a condition in which an outermost peripheral portion of the bonded substrate stack is separated from an inside to an outside of the bonded substrate stack by the fluid injected into the bonded substrate stack.